

WHAT IS CLAIMED IS:

1. A method in a data processing system for optimizing a program, the method comprising the steps of:

automatically analyzing a statistical profile of a program execution; and

5 automatically optimizing the program based on at least one of the analysis, information about at least one prior compilation of the program, and information about at least one prior optimization of the program.

10 2. The method of claim 1, wherein the program is automatically optimized during a compilation.

3. The method of claim 2, wherein the program is automatically optimized during a run-time compilation.

15 4. The method of claim 1, further comprising the steps of:  
interrupting the program;  
recording an execution state of the program; and  
storing the recorded execution state to create the statistical profile.

20 5. The method of claim 1, wherein the information about at least one prior compilation of the program includes a profile of the program implemented during the at least one prior compilation.

6. The method of claim 1, wherein the information about at least one prior optimization of the program includes a profile of at least one change made to the program during the at least one prior compilation.

5 7. A computer-readable medium containing instructions that cause a data processing system to perform a method for optimizing a program, the method comprising the steps of:

automatically analyzing a statistical profile of a program execution; and

automatically optimizing the program based on at least one of the analysis, information about at least one prior compilation of the program, and information about at least one prior

10 optimization of the program.

8. The computer-readable medium of claim 7, wherein the program is automatically optimized during a compilation.

15 9. The computer-readable medium of claim 8, wherein the program is automatically optimized during a run-time compilation.

10. The computer-readable medium of claim 7, further comprising the steps of:

interrupting the program;

20 recording an execution state of the program; and

storing the recorded execution state to create the statistical profile.

11. The computer-readable medium of claim 7, wherein the information about at least one prior compilation of the program includes a profile of the program implemented during the at least one prior compilation.

5 12. The computer-readable medium of claim 7, wherein the information about at least one prior optimization of the program includes a profile of at least one change made to the program during the at least one prior compilation.

10 13. A data processing system for optimizing a program, the data processing system comprising:

a memory having an optimization program that automatically analyzes a statistical profile of a program execution, and automatically optimizes the program based on at least one of the analysis, information about at least one prior compilation of the program, and information about at least one prior optimization of the program; and

15 a processing unit that runs the program.

14. The data processing system according to claim 13, wherein the program is automatically optimized during a compilation.

20 15. The data processing system according to claim 14, wherein the program is automatically optimized during run-time compilation.

16. A data processing system for optimizing a program, the data processing system comprising:

means for automatically analyzing a statistical profile of a program execution; and

means for automatically optimizing the program based on at least one of the analysis,

5 information about at least one prior compilation of the program, and information about at least one prior optimization of the program.